

ABSTRACT OF THE DISCLOSURE

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3 A videoconferencing apparatus includes a multi-point  
4 (MP) conference application that enables the apparatus to  
5 combine and distribute audio and video signals received  
6 from a plurality of remote conference endpoints, thereby  
7 obviating the need to provide a separate multi-point  
8 control unit (MCU) having hardware-based inverse  
9 multiplexers (IMUXs). The videoconferencing apparatus has  
10 a plurality of communication ports (typically ISDN ports)  
11 for coupling the videoconferencing apparatus to the remote  
12 endpoints through a switched network. The MP conference  
13 application is configured to generate, for each remote  
14 conference endpoint participating in a conference, discrete  
15 instances of a signal processing train by means of  
16 dynamically allocable IMUXs, each processing train  
17 including a communication process (including  
18 multiplexing/demultiplexing and signaling functions) and  
19 audio/video/data codecs. Signals received at the  
20 communication ports are directed to the appropriate signal  
21 processing train for separate processing of each endpoint  
22 session. The processed audio and video signals are  
23 subsequently conveyed to an audio mixer and video switching  
24 module for combination with locally-generated audio and

1 video signals. The outputs of the audio mixer and video  
2 switching module are sent to each of the plurality of  
3 signal processing trains, which process the combined  
4 signals according to a transmit mode for distribution to  
5 the remote endpoints over the switched network.